

## (19) United States

# (12) Patent Application Publication (10) Pub. No.: US 2019/0352383 A1

Chakravarthy et al.

Nov. 21, 2019 (43) **Pub. Date:** 

### (54) **BLOOD-BRAIN BARRIER** TRANSMIGRATING COMPOUNDS AND USES THEREOF

(71) Applicant: National Research Council of

Canada, Ottawa (CA)

(72) Inventors: Balu Chakravarthy, Ottawa (CA);

Danica Stanmirovic, Ottawa (CA); Yves Durocher, Montreal (CA)

Assignee: National Research Council of

Canada, Ottawa, ON (CA)

16/481,898 (21) Appl. No.:

(22) PCT Filed: Jan. 30, 2018

PCT/IB2018/050576 (86) PCT No.:

§ 371 (c)(1),

(2) Date: Jul. 30, 2019

#### Related U.S. Application Data

(60) Provisional application No. 62/530,980, filed on Jul. 11, 2017, provisional application No. 62/452,015, filed on Jan. 30, 2017.

#### **Publication Classification**

(51) Int. Cl.

C07K 16/18 (2006.01)C07K 14/47 (2006.01)A61K 9/00 (2006.01)

(52)U.S. Cl.

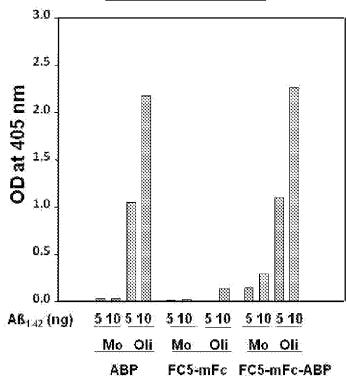
> CPC ..... C07K 16/18 (2013.01); C07K 14/4711 (2013.01); A61K 9/0019 (2013.01); C07K 2317/565 (2013.01); C07K 2319/10 (2013.01); C07K 2317/569 (2013.01); C07K 2319/70 (2013.01); C07K 2319/33 (2013.01); C07K 2319/30 (2013.01); C07K 2317/24 (2013.01)

#### (57)ABSTRACT

A brain-penetrating composition of amyloid-ß binding peptide is disclosed. This may be useful in the treatment of Alzheimer's disease, for example as a bifunctional molecule, comprising a blood-brain barrier crossing antibody and an amyloid-ß targeting peptide linked via an Fc fragment that is able to transmigrate across the blood-brain barrier into the brain, and compositions comprising same. Methods of using this composition for treating Alzheimer's disease are disclosed.

Specification includes a Sequence Listing.

## Aß binding (ELISA)



## Aß-overlay (WB)

